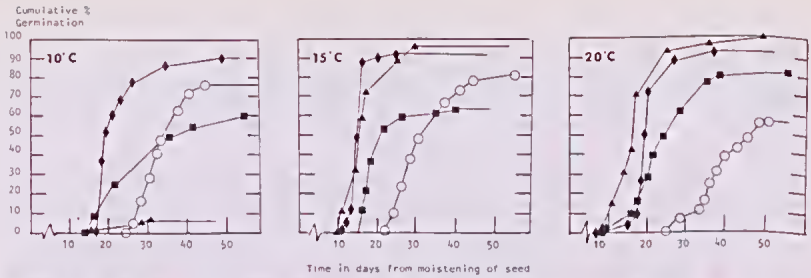

Figure 1. Time course of cumulative germination for *Clematis microphylla* (open circles) and *Asparagus asparagoides* (filled symbols) — 1979 seed (diamonds); 1981 seed (lot 1 squares; lot 2 triangles).

with an overall three test mean of 50.7% viability at this temperature and 48 days required for 50% germination. The best overall result was at 15° C with 15 days to 25% germination, 16 days to 50% and the mean days taken for final germination was 17.5.

Table 2. Germination values for *Clematis microphylla* and *Asparagus asparagoides* seed collected in December 1979.

	Cabinet Temperature (°C)			
Clematis microphylla	10	15	20	25
Days to first germination	25	22	26	–
Mean days to germinate 50%	30.0	26.6	37.2	–
Mean days to germinate final %	32.8	31.5	38.4	–
Asparagus asparagoides				
Days to first germination	18	12	8	8
Mean days to germinate 50%	18.3	14.4	17.8	–
Mean days to germinate final %	22	15.4	20	27.6

IMPLICATIONS

In that *Asparagus asparagoides* occurs in habitats similar to those of *Clematis microphylla* it may be supposed that it is competing with the latter species. The optimum temperature range for germination of *Clematis microphylla* is lower than that for *A. asparagoides*. Germination of *A. asparagoides* is much more rapid than *Clematis microphylla* with 50% germination completed before the latter commences. A comparison of germination performance suggests that *A. asparagoides* is able to establish faster at the same time of the year as *C. microphylla*; that its seed is more viable, and that it can germinate readily at higher temperatures than can *C. microphylla*.

Both *A. asparagoides* and *C. microphylla* are perennials. *C. microphylla* individuals persist for many years. No new seedling growth of *C. microphylla* has been noted at Woodman Point. Clumps of germinating seedlings of *A. asparagoides* were observed in August (presumably from the previous year's seed). These were in the immediate vicinity of existing mature plants, suggesting that dispersal does not necessarily occur far removed from the parents. The life span of *A. asparagoides* is probably shorter than that of *C. microphylla* but the present distribution and abundance of the former at Woodman Point suggest that it would be difficult to eradicate it from the area.

ACKNOWLEDGEMENTS

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NOTES ON DISTRIBUTION AND SEASONAL MOVEMENT OF THE STRIATED PARDALOTE IN WESTERN AUSTRALIA

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In Western Australia two subspecies of the Striated Pardalote, *Pardalotus striatus* (Gmelin), are currently recognised: *P. s. substriatus* Mathews which is distributed in the southern part of the State including the North West Division, and *P.* s. *uropygialis* Gould which occurs in the Kimberley Division. These subspecies (often recognised as separate species) are differentiated on plumage characteristics and breeding behaviour.

P. s. *substriatus* is generally assumed to be migratory. Sedgwick (1971) stated that in summer it was distributed in eucalypt forests and woodlands south of the Mulga-eucalypt line (Gardner 1942) but was not present in the northern wheatbelt. However, by May it was moving north and had reached the North West Division. Sedgwick (*ibid*) was able to locate few breeding data (October to December) and suggested that breeding may be confined to the South West, although J.R. Ford (in Sedgwick, *ibid*) considered it to be a migrant to the Great Victoria Desert where it stayed to breed during good seasons. Ford also postulated that the birds move into the Great Victoria Desert area from both southwestern Australia and from Eyre Peninsula, possibly crossing the Nullabor Plain.

In this paper I assess the above assumption on migration by synthesizing my published and unpublished data from southern Western Australia. Localities of data collection are indicated on Figure 1.

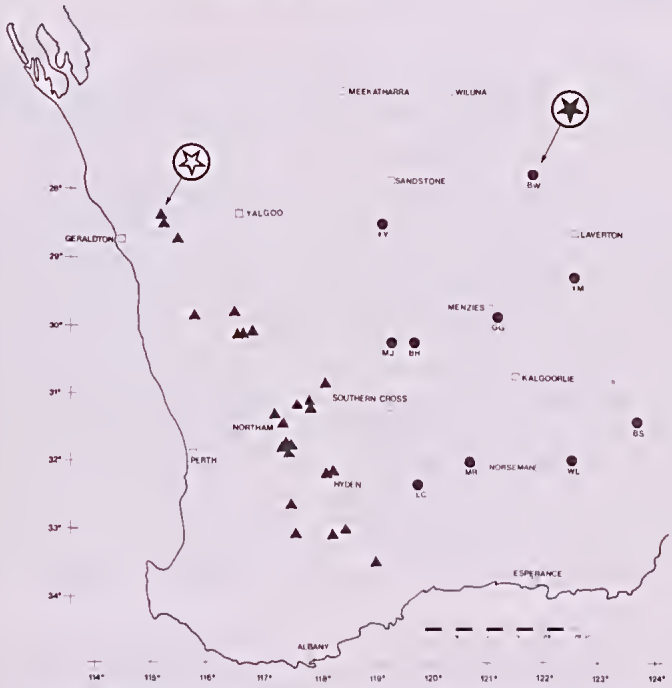

Figure 1. Map showing data collection localities in the Western Australian wheatbelt (triangles) and Eastern Goldfields (circles). Hollow star shows locality of East Yuna. Solid star indicates Banjawarn Station where possible resident form of Striated Pardalote occurs.

Much of this data does not accord with Sedgwick's hypothesis on movements. For example at East Yuna Nature Reserve (65km east-north-east of Geraldton) the species was present throughout the year although in January and February it was recorded less frequently. This is based on daily recordings made by D.J. McGauran from December 1972 to November 1976 (Dell & McGauran 1981).

Figure 2 indicates the percentage of days each month that Striated Pardalote was recorded at East Yuna, together with the monthly rainfall. Striated Pardalotes were present every month ranging from 100% of days in October 1973 to 13% of days in June 1976. Although annual and seasonal variations indicate a possible relationship with rainfall with a trend towards more frequent recordings in high rainfall periods and less frequent recordings in low rainfall periods, it would be necessary to compile data over a broad area before such a correlation could be demonstrated.

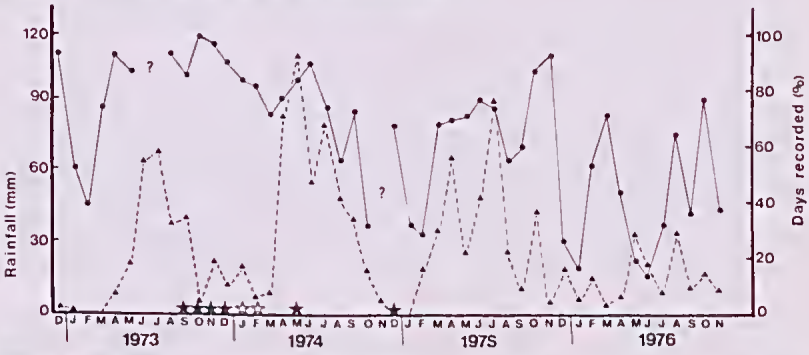

Figure 2. Monthly rainfall from 1973 to 1976 (broken line) and percentage of days each month that Striated Pardalote was recorded (solid line) at East Yuna. Solid stars indicate adults visiting nest hollows, open stars indicate adults with fledglings.

Breeding activity (adults visiting nest hollows) at East Yuna was noted during September to December 1973 and May and December 1974 (Fig.2). Fledglings with adults were recorded in January and February 1974. Thus, at East Yuna the Striated Pardalote breeding season includes summer, the time of year when Sedgwick (*ibid*) thought it was absent.

Elsewhere in the wheatbelt Dell (1977, 1978a, 1981) noted flocks flying north or northeast in March, south in September and south and west in October and November. Dell (1978b) noted birds in transit in the central wheatbelt in January. Birds were recorded every month that surveys were conducted in the wheatbelt indicating that the Striated Pardalote was present throughout the year although residency was not determined. The number of recording days and the number of individuals (in parenthesis) are as follows: January - 2(21), March - 24(103), April - 45(144), May - 47(71), June - 13(10), July - 7(6), August - 12(11), September - 43(62), October - 24(104), November - 33(87).

In the Eastern Goldfields a minimum of five sample quadrats were censused at each study site (Fig. 1) for a period of five days at different seasons between September 1978 and December 1981 (Biological Surveys Committee 1984). In total 208 days were spent censusing birds.

Where eucalypt woodland was well represented (e.g. the six southern sites) the birds were present on all surveys, although there were differences in seasonal abundance. Highest numbers were recorded in February, April, August and September, and lowest numbers in July and November. Marked changes in population level at different seasons suggest that individuals are non-sedentary.

By comparison data from some sites in the northern parts of the Eastern Goldfields indicate that the Striated Pardalote was not present throughout the year. For example at GG (located on the transition between the eucalypt dominated woodlands typical of the South-West Botanical Province and the *Acacia* dominated woodlands of the Eremaean Botanical Province) none were recorded in July and only low numbers were recorded in march and October. At YM none were recorded in March and October and few in July.